

Name:

Solutions

Davis

1. Without using a calculator, evaluate each inverse trig expression to determine the corresponding angle measure:

a) $\sin^{-1}\left(\frac{1}{2}\right) = 30^\circ \text{ or } \frac{\pi}{6}$	b) $\cos^{-1}\left(\frac{\sqrt{2}}{2}\right) = 45^\circ \text{ or } \frac{\pi}{4}$
c) $\sin^{-1}\left(\frac{\sqrt{3}}{2}\right) = 60^\circ \text{ or } \frac{\pi}{3}$	d) $\tan^{-1}(1) = 45^\circ \text{ or } \frac{\pi}{4}$
e) $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right) = 45^\circ \text{ or } \frac{\pi}{4}$	f) $\cos^{-1}\left(\frac{1}{2}\right) = 60^\circ \text{ or } \frac{\pi}{3}$
g) $\tan^{-1}(\sqrt{3}) = 60^\circ \text{ or } \frac{\pi}{3}$	h) $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right) = 30^\circ \text{ or } \frac{\pi}{6}$

$$\text{i) } \tan^{-1}\left(\frac{\sqrt{3}}{3}\right) = 30^\circ \text{ or } \frac{\pi}{6}$$

$$\text{j) } \sin^{-1}(0) = 0^\circ \text{ or } 0$$

$$\text{k) } \sin^{-1}(1) = 90^\circ \text{ or } \frac{\pi}{2}$$

$$\text{l) } \cos^{-1}(0) = 90^\circ \text{ or } \frac{\pi}{2}$$

$$\text{m) } \cos^{-1}(1) = 0^\circ \text{ or } 0$$

$$\text{n) } \sin^{-1}(-1) = -90^\circ \text{ or } -\frac{\pi}{2}$$

$$\text{o) } \cos^{-1}(-1) = 180^\circ \text{ or } \pi$$

$$\text{p) } \sin^{-1}\left(\frac{-1}{2}\right) = -30^\circ \text{ or } -\frac{\pi}{6}$$

$$\text{q) } \cos^{-1}\left(\frac{-1}{2}\right) = 120^\circ \text{ or } \frac{2\pi}{3}$$

$$\text{r) } \tan^{-1}(-1) = -45^\circ \text{ or } -\frac{\pi}{4}$$

$$s) \sin^{-1}\left(\frac{-\sqrt{3}}{2}\right) = -60^\circ \text{ or } -\frac{\pi}{3}$$

$$t) \cos^{-1}\left(\frac{-\sqrt{3}}{2}\right) = 150^\circ \text{ or } \frac{5\pi}{6}$$

$$u) \sin^{-1}\left(\frac{-\sqrt{2}}{2}\right) = -45^\circ \text{ or } -\frac{\pi}{4}$$

$$v) \cos^{-1}\left(\frac{-\sqrt{2}}{2}\right) = 135^\circ \text{ or } \frac{3\pi}{4}$$

$$w) \tan^{-1}(-\sqrt{3}) = -60^\circ \text{ or } -\frac{\pi}{3}$$

$$x) \tan^{-1}\left(\frac{-\sqrt{3}}{3}\right) = -30^\circ \text{ or } -\frac{\pi}{6}$$

Turn over for more fun